The High School Leckhampton

Year 8 **SCIENCE**

Intent

Our main aim and ambition in science is for our students to develop a curiosity and a desire to want to find out and understand more about the world around them. Science is a subject rich in knowledge that can change lives and open so many doors for our students. Through teaching a varied curriculum of biology, chemistry and physics, students develop the skills that they require to be able to apply their understanding of science to situations all around them and allow them to make informed choices as an educated citizen who promotes inclusivity. Students will be encouraged to question and recognise the power of rational explanation, fostering a sense of enthusiasm and creativity about natural phenomena.

Topic Titles

8B1 Biology Topic 1 Respiration, Gas Exchange and Biomechanics

8C1 Chemistry Topic 1 Energetics, The Periodic Table and Materials

8P1 Physics Topic 1 Electricity and Magnetism

8B2 Biology Topic 2 Genetics and Evolution

8C2 Chemistry Topic 2 The Earth, Atmosphere and Chemical Reactions

8P2 Physics Topic 2 Energy, Machines, Fuels and Power

8WS Working Scientifically Topic Being a Scientist

How will knowledge and skills be taught?

In lessons students will learn from their teacher, and work individually or with others, to develop their scientific knowledge and conceptual understanding.
Practical activities will help students understand the nature, processes, and methods of science, as well as the uses and implications of science for today and the future.
Completing homework using provided resources will help consolidate students' understanding and prepare them for future lessons.
Optional activities will challenge and extend students' scientific application.

Links with other subjects

ART – Drawing accurate, annotated scientific diagrams.
DT – Material and machine properties.
ENGLISH – Comparatives, etymology, recalling exact definitions, writing and following detailed instructions.
GEOGRAPHY – Geology and nutrient cycles.
HISTORY – Periodic table, genetics and evolution theory developments, extinctions & atmosphere composition.
MATHS - Converting units, calculations, using and rearranging equations, rounding results, drawing scatter and bar graphs.
PE – Effect of exercise on respiration types and gas exchange.

Recommended Reading and Preparation for Learning

How to Grow a Human: Adventures in Who We Are and How We Are Made – Philip Ball
The Periodic Table Book: A Visual Encyclopedia of the Elements - Dorling Kindersley
How the Body Works: The Facts Simply Explained – Dorling Kindersley
Magnetic Electricity! The Power of Magnets and Their Role in Electricity - Science for Kids - Children's Energy Books
Genes and DNA (Kingfisher Knowledge) – Richard Walker
The Incredible Human Journey – Alice Roberts
Horrible Science Collection – Nick Arnold
The Secret Life of Genes – Derek Harvey
There Is No Planet B - Mike Berners-Lee
Genetics in Minutes – Tom Jackson
The Periodic Table – Primo Levi

More recommendations at:
https://www.hsl.gloucs.sch.uk/literacy-and-recommended-reading

How can parents help?

Encourage students to use the topic resources on the VLE, the Year 7 Science Basics booklet and the CGP KS3 Science Study Guide provided.

Extend students' understanding using appropriate YouTube channels [e.g. Cognito, PrimroseKitten, KhanAcademy, FuseSchool, AmoebaSisters, Freesciencelessons, AsapScience, Crash Course, SciShow, Veritasium, Kurzgesagt – In a Nutshell, BBC Earth Lab, TED-Ed, Royal Society of Chemistry] and relevant Science-related films, series, and documentaries on various streaming services.

Take an interest – be curious and ask students about their learning.